

**TECHNICAL WORK MAY NOT BEGIN PRIOR TO CO APPROVAL**

NASA/GODDARD SPACE FLIGHT CENTER

**REQUEST FOR TASK PLAN / TASK ORDER**

CONTRACTOR	CONTRACT NO./TASK NO.	JOB ORDER NUMBER	APPROP. FY
QSS Group, Inc.	NAS5- 99124      TASK NO. 23      AMENDMENT	567-839-30-63-89	99

TASK TITLE: (NTE 80 characters; include Project name)

Validation of EO-1 X-Band Phased Array Antenna While On Orbit

APPROVALS: (Type or print name and sign)

ASSISTANT TECHNICAL REPRESENTATIVE (OR TASK MONITOR)	DATE	ORG CODE	MAIL CODE	PHONE
Kenneth Perko <i>Kenneth Perko</i>	4-15-99	567	567	301-286-6375
BRANCH HEAD	DATE	CODE		PHONE
John Chitwood <i>John Chitwood</i>	4-15-99		567	301-286-5936
CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)	DATE	CODE		PHONE
Fred Huegel <i>Deborah A. Clark</i>	4/16/99		568	301-286-2285
FLIGHT HARDWARE, CRITICAL GSE OR SOFTWARE? (If YES, NEED CODE 303 CONCURRENCE NEXT BLOCK)	CONTRACTING OFFICER'S QUALITY REP.		DESIGNATED FAM:	
(X) NO      ( ) YES	Larry Moore			

The contractor shall identify and explain the reason for any deviations, exceptions, or conditional assumptions taken with respect to this Task Order or to any of the technical requirements of the Task Order Statement of Work and related specifications. The contractor shall complete and submit the required Reps and Certs.

(To be completed by Contracting Officer)

C.O. Requested Quote on:

Date: APR 19 1999

Contractor will develop specification or statement of work under this task for a future procurement.	(X) NO      ( ) YES
Flight hardware will be shipped to GSFC for testing prior to final delivery.	( ) NO      ( ) YES      (X) N/A
Government Furnished Property/Facilities:	(X) NO      ( ) YES -- SEE LIST OF GFP (offsite only) / FACILITIES (onsite only)
Onsite Performance:	( ) NO      (X) YES      If yes: ( ) TOTAL      (X) PARTIAL If partial, indicate onsite work in SOW by asterisk (*)
Surveillance Plan Attached:	(X) NO      ( ) YES

Highlighted Contract Clauses: (to be completed by Contracting Officer)

Per Clause H.14, Task Ordering Procedure, subparagraph (f), the effective date of this task order shall be May 3, 1999.

**INCENTIVE FEE STRUCTURE (check one)**

(See Contract NAS5-99124, Attachment K, Incentive Fee Plan)

	No. 1	No. 2	X No. 3	No. 4	No. 5
Cost	10%	50%	25%	25%	%
Schedule	15%	25%	25%	50%	%
Technical	75%	25%	50%	25%	%

(To be completed by Contracting Officer)

The target cost of this task order is \$ 9,132

The target fee of this task order is \$ 594

The total target cost and target fee of this task order as contemplated by the Incentive Fee clause of this contract is \$ 9,726

The maximum fee is \$ 868

The minimum fee is \$0.

**AUTHORIZED SIGNATURE**

THIS TASK ASSIGNMENT IS ISSUED ACCORDING TO THE CONTRACT CLAUSE "TASK ASSIGNMENTS AND REPORTS"

*Lorrie L. Eakin*  
SIGNATURE OF CONTRACTING OFFICER

9/3/99  
DATE

Lorrie L. Eakin  
Contracting Officer  
TYPED NAME OF CONTRACTING OFFICER

**CONTRACTOR'S ACCEPTANCE**

AUTHORIZED SIGNATURE

DATE

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QSS Group, Inc.	NAS5- 99124	23	

Applicable paragraphs from contract Statement of Work: Function 2 - F

**STATEMENT OF WORK:** (Continue on blank paper if additional space is required)

A measurement will be made to evaluate the performance of the EO-1 X-band phased array when used for PSK communications.

The issue of concern is that phase shifts in the array elements that are used for beam pointing could cause a phase shift in the carrier that appears like a data phase shift to the PSK receiver. This would cause data errors that may be corrected by the Reed-Solomon decoder used in the EO-1 communications link. It is necessary that NASA know whether such errors are being induced. If they are, it is necessary to have a quantitative understanding of the effects of such beam pointing induced errors because they will use up some of the Reed-Solomon error correcting ability that is assumed available for RF link error correction.

The contractor shall complete the ongoing development and documentation of a method to evaluate the science data and from it the extent to which beam pointing errors occur as the EO-1 X-band phased array antenna is pointed at a ground station.

The contractor shall implement the method and test it using data sets obtained from EO-1 spacecraft I&T operations. \*\*Government computing / data storage facilities can be made available if jointly determined as beneficial to the effort.

Travel will be authorized as directed/required by the ATR.

**PERFORMANCE SPECIFICATIONS:**

Test reports shall be the deliverables. Specifications: test purpose, procedures, summary of the test results, data analysis of the I&T RF link including analysis of bit and burst errors and the Reed-Solomon error correction performance

**APPLICABLE DOCUMENTS:**

EO-1 X-band phased array documents are located at URL:  
<http://eo1.gsfc.nasa.gov/NUwww/Technology/xpaa.htm>

Results of previous work on error performance are available at <http://jazzman.gsfc.nasa.gov/ftp/eo1.zip>

**TASK END DATE:** 9/30/99**MILESTONES/DELIVERABLES AND DATES:**

6/1/99 Review status of existing work completed which is relevant to this task  
7/1/99 Complete implementation of facilities needed to process data  
9/30/99 Obtain and process EO-1 I&T data sets and deliver status report

**PERFORMANCE STANDARDS:**

Schedule: On-time delivery of Status Report  
Technical: ATR's acceptance of Status Report Results

**FINAL DELIVERY DESTINATION (NAME, BLDG, ROOM):**

Kenneth Perko, Building 19, Room S28